



DIGITAL RELAY TIMER

MODEL RT-1



DESCRIPTION

The CLC DIGITAL RELAY TIMER is a modularized, solid state device which measures all of the TIME parameters of relay contact motion, accurately, economically, and reliably. The simplicity of the front panel controls allows non-technical personnel to obtain measurements quickly. The measurements are displayed in milliseconds on the front panel of the instrument with three CLC decimal digit indicators.

The TIME parameters include all make and break bounce-times; operate, travel and total times; and differential measurements between two sets of contacts. The CLC DIGITAL RELAY TIMER will accommodate any relay contact configuration on polarized and non-polarized relays. External test-relay connections are made through a front panel Cannon connector, allowing complete versatility and freedom in the test circuit arrangement. One mating Cannon plug is provided.

The controls include On-Off switch, Function Select, Energize-De-Energize, Range, and Display Time. The three full scale time readings are 9.99 msec., 99.9 msec., and 999 msec. Provisions are made for one-shot relay measurements. A separate indicator shows which of the two sets of contacts move first in the differential measurement.

TYPICAL APPLICATIONS

Production Testing

Incoming Inspection

Quality Control

Laboratory Measurements

Engineering Development

Relay Comparison

Mercury Wetted OR Dry Contact Relay Evaluation

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TECHNICAL SPECIFICATIONS

Parameters Measured: see "Function Description".
Controls: described in "Control Description".
Displays: three in-line, in-plane, wide-angle,
high intensity, high contrast-ratio
CLC NUMERIC INDICATORS.
Ranges: 9.99 milliseconds fullscale
99.9 milliseconds fullscale
999. milliseconds fullscale
Resolution and Linearity: 0.1%

CONTROL DESCRIPTION

Function Switch—selects the time parameter measured, in conjunction with the Energize/De-Energize switch.

Energize/De-Energize Switch—selects the direction of contact movement during the measurement time.

Range Switch—selects full scale readings of 9.99 msec., 99.9 msec., or 999. msec. It also selects the relay switching rate to correspond to full scale readings.

FUNCTION DESCRIPTION

The following functions can be measured when testing a non-polarized relay; operate time, break bounce, travel time, make bounce, total time, and differential time. Each measurement can be made in either the coil energize direction of contact motion or in the coil de-energize direction.

When testing a polarized relay, the Energize/De-Energize switch is used in a normal manner for break-bounce travel time, and make-bounce functions only. The operate time is measured in the set direction by placing the function switch in the Operate position, and is measured in the reset direction by placing the switch in the Polarized Operate position. Total time is measured in a similar manner.

A description of each function follows.

OPERATE TIME—"Operate"—time measured from a change in coil current (energize or de-energize) to the break of the contact from its position just prior to the change in coil current. (This is also the operate time of a polarized relay, measured during the set direction of contact motion.)

BREAK BOUNCE—"B-Bounce"—time measured from the first break of the contact to the last break, when the contact bounces upon leaving a given position.

TRAVEL TIME—"Travel"—time measured from the first break of the contact in one position, to the first make of the contact in the opposite position.

MAKE BOUNCE—"M-Bounce"—time measured from the first make of the contact to the last make, when a contact bounces upon arriving to a given position.

TOTAL TIME—"Total"—summation of operate time, travel time, and make bounce time; the time measured

Test Relay: Type; polarized or non polarized Coil;
4 amperes maximum
400 volts maximum
100 va maximum

Power Required: a—115 volts, 60 cycle, 75 watt
b—power for the test relay coil

Physical Details: Cabinets: 5" x 16½" x 14¼" deep
Panel: 5¼" x 19" wide
Weight: 25 pounds

Display Time Control and Switch—controls the length of the display time. Manual operation is provided with this control full counter-clockwise.

Manual Push Button—When "Display Time" is counter clockwise, pressing this switch actuates the Test relay and the Timer cycles once.

from a change in coil current (energize or de-energize) to the last make when a contact bounces upon arriving in the opposite position; (This is also the total time of a polarized relay, measured during the set direction of contact motion.)

DIFFERENTIAL TIME—"Diff"—time measured from the first break of a contact on one relay pole to the corresponding first break of a contact on another relay pole. (If these poles are on separate relays, the coils must be energized simultaneously.)

POLARIZED OPERATE TIME—"Pol Op"—operate time of a polarized relay, measured during the reset direction of contact motion.

POLARIZED TOTAL TIME—"Pol Total"—total time of a polarized relay, measured during the reset direction of contact motion.

To Order: Specify RT-1 RELAY TIMER

Delivery: Stock to 30 days

Warranty: 90 days on material and workmanship.

Terms: Net cash, 30 days

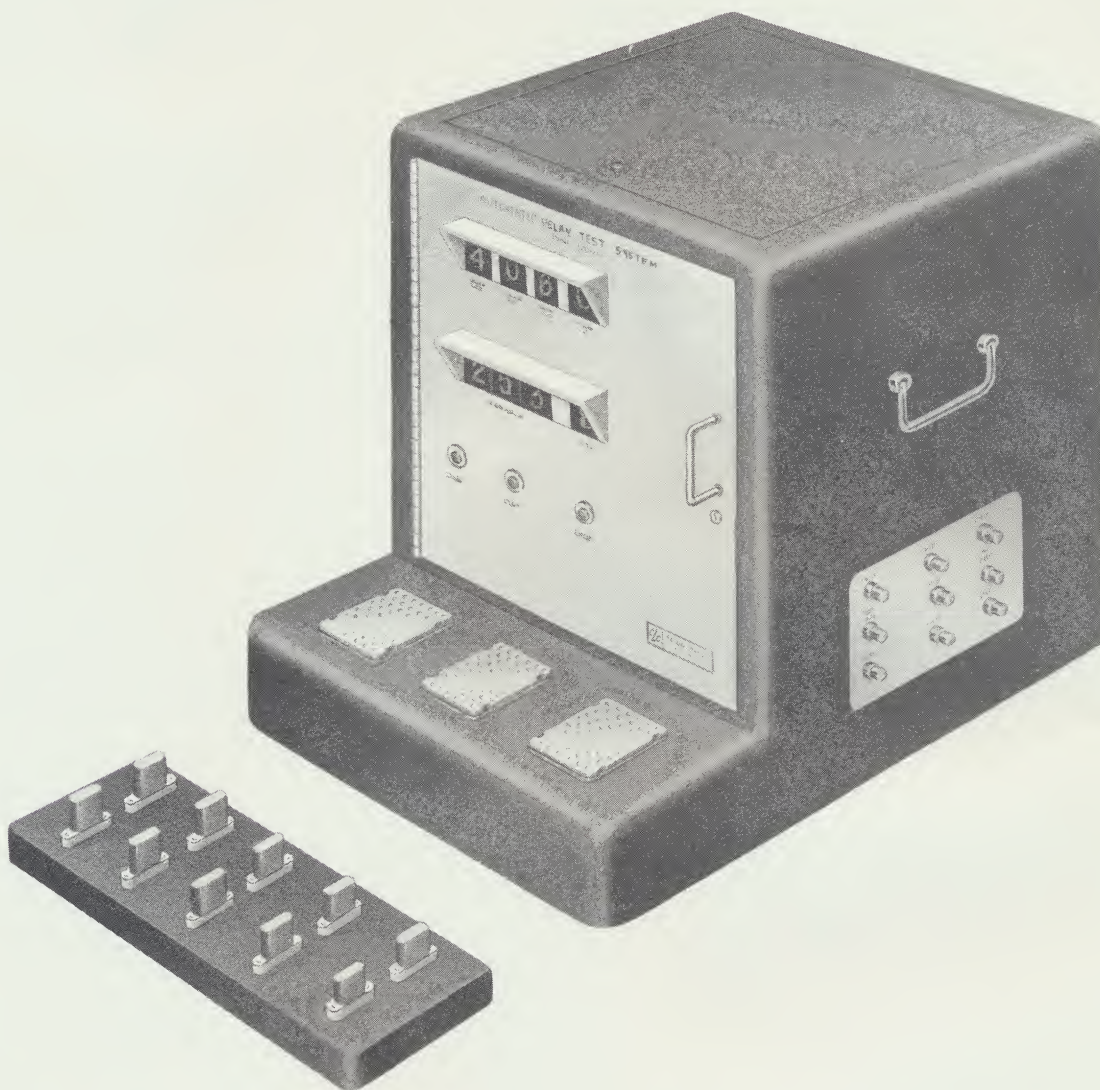
Computer Logic Corp. offers a complete line of digital and analog plug-in cards, mounting chassis, and power supplies. Proven in many engineered systems and instruments, CLC cards are compact, reliable, competitive in cost, easy to use, and have large design margins.

CLC cards are extensively used in LOGIC-LAB. LOGIC-LAB is a proprietary line of units where the logic points of all cards are available at a removable front-panel program board. Rear connectors allow signal flow between different LOGIC-LAB models. The user programs solutions to a multitude of problems in digital computing, word checking and generation, interface problems, system timing, simulation, and automatic checkout.

A major improvement in numeric in-plane readouts is available in the CLC DI-20 series. Featuring high light output, wide viewing angle, fail-safe techniques, and programmed digit-color, the series DI-20 readout is only 2" deep.

Other new digital instruments similar to the RT-1 Digital Relay Timer will be available in the future.

MODEL Q-365



AUTOMATIC TEST SYSTEMS

The proprietary system shown automatically tests any relay in accordance with MIL-R-5757D. Tests 10 relays including dry-circuit, contact R, time and bounce, etc.



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